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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Takayuki ARAKI et al.

Group Art Unit: 1711

Serial Number: 10/018,345

Examiner: TRAN, THAOT

Filed: December 19, 2001

For: FLEXIBLE FLUORINE-CONTAINING MATERIAL HAVING HEAT
RESISTANCE AND NON-TACKINESS

DECLARATION UNDER 37 CFR 1.132

Honorable Commissioner

Washington, D.C. 20231

Sir,

Nobuhiro HORANO, citizen of Japan, duly deposes and says:

1. That he has graduated from Osaka City University, Faculty of Engineering, Japan, in the year of 1986;
2. That he was employed in his capacity since 1998 by DAIKIN INDUSTRIES, LTD.;
3. That he has been engaged in research and development on fluorine-containing elastomers and compositions;
4. That he has read and is familiar with the instant application for United States Letters Patent and the Office Action thereto mailed May 19, 2003;
5. That he experimented and proved that the effects of the applicants' invention described in USSN 10/018,345 cannot be obtained when DAI-EL® Thermoplastic T-530 available from DAIKIN

INDUSTRIES, INC. used in EXAMPLES 1-6 of U.S. Patent 4,935,467 is used as a fluorine-containing multi-segment polymer.

EXPERIMENTAL

DAI-EL® Thermoplastic T-530 is an fluorine-containing multi-segment polymer of DAIKIN INDUSTRIES, INC who is the assignee of USSN 10/018,345, and contains vinylidene fluoride (VdF) unit in the elastomeric fluorine-containing polymer chain segment in an amount of 40-90 % by mole.

The procedures of EXAMPLE 3 of USSN 10/018,345 were repeated by using DAI-EL® Thermoplastic T-530 as an fluorine-containing multi-segment polymer instead of the fluorine-containing multi-segment polymer (a) shown in Table 4 of USSN 10/018,345 and the properties of material were evaluated in the same manner as in USSN 10/018,345.

RESULTS

The results are shown in TABLE A together with the results of EXAMPLE 3 described in Table 4 of USSN 10/018,345.

TABLE A

	Ex. 1	Com.Ex. A
Fluorine-containing material		
Fluorine-containing multi-segment polymer (a)	DAI-EL® Thermoplastic T-530	
Elastomeric segment A (% by mole)	TFE / PMVE (61/39)	VdF cont. 40-90
Non-elastomeric segment B (% by mole)	TFE / PPVE (98/2)	
Proportion of B in (a) (% by weight)		17
Fluorine-containing resin (b) (a)/(b) (weight ratio)	PFA 80/20	PFA 80/20

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Properties of material	Ex. 3	Com.Ex. A
Mechanical properties		
Tensile strength (kg/cm ²)	173	121
Elastic modulus (kg/cm ²)	212	167
Rubber hardness (ASTR-A)	85	82
Resin hardness	44	43
Viscoelasticity		
150°C-E' (10 ⁷ dyn/cm ²)	6.80	6.80
200°C-E' (10 ⁷ dyn/cm ²)	5.60	5.20
Mold-processability (MFI: 372°C, 5 kgf)	11.9	25
Surface characteristics		
Water contact angle (degree)	112	96
Contact angle of 31 dyne solution (degree)	57	49
Non-tackiness		
Tackiness	○	×
Stain-proofing property	○	×

The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

This 8th day of August, 2003

by Nobuhiro Hirano
Nobuhiro HIRANO

We, the undersigned witnesses, hereby acknowledge that Nobuhiro HIRANO is personally known to us and did execute the foregoing Declaration in our presence on:

Date: August 8, 2003

Witness Fatsaya Higuchi

Date: August 8, 2003

Witness Eli Mukai